

ABERDEEN PROVING GROUND POLLUTION PREVENTION HANDBOOK

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INTRODUCTION

The development of the Aberdeen Proving Ground (APG) Pollution Prevention (P2) Handbook was based on the installation's location, mission, and personnel. APG supports an effective work force of 14,000 military and civilian personnel, as well as 4,800 military family members who reside on post. The APG P2 Handbook was written and developed with these personnel, their families, and the unique environment of the Chesapeake Bay in mind, stressing that P2 efforts by all at APG are a main priority. As a result, the Handbook is an easy-to-use document to aid all APG personnel in understanding the principles of P2 and in identifying and using environmentally responsible products and processes.

APG's Location: APG is located in Harford County, Maryland, near the head of the Chesapeake Bay. Environmental protection of the water, air, and land is a long-term, ongoing practice. APG, consisting of the Aberdeen and the Edgewood areas, comprises approximately 72,500 acres, nearly half of which is under water or marshy, wooded terrain. The remainder is low-lying, flat to gently rolling country.

The APG Mission: APG is an active U.S. Army Test and Evaluation Command (TECOM) installation within the U.S. Army Materiel Command (AMC). It includes 13 offices, 10 directorates, and approximately 58 tenant activities or liaison offices. Major tenants include the U.S. Army Test and Evaluation Command (TECOM), U.S. Army Aberdeen Test Center (ATC), U.S. Army Chemical and Biological Defense Command (CBDCOM), U.S. Army Research Laboratory (ARL), U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM), U.S. Army Medical Research Institute for Chemical Defense (MRICD), U.S. Army Environmental Center (AEC), U.S. Army Ordnance Center and School (OC&S), Foreign Military Intelligence Battalion (FMIB), U.S. Army Materiel Systems Analysis Activity (AMSAA), and Kirk U.S. Army Health Clinic (KUSAHC).

APG's mission is as diverse as the tenant agencies that reside on the installation. APG tenants test and evaluate a large cross-section of soldier equipment, including vehicles, weapons, training devices, and clothing. Tenants plan and conduct development and production tests of weapons and weapons systems, armor plate, combat vehicles and general- and special-purpose vehicles. These tests span the materiel life-cycle from conceptual phase through production and actual deployments, including live fire vulnerability.

APG is also home to biological and chemical defense research, development, and engineering programs. Research is also conducted in soldier performance optimization, soldier-machine interactions, smart weapons systems, and computer technology.

In addition to its research and development mission, APG is the largest training center for military and civilian personnel in the field of maintenance and integrated management of combat fire power and ground mobility materiel. This training ranges from military occupational skill-producing courses for the new soldier, to mid-level leadership and supervisory instruction for junior noncommissioned officers, to technical enhancement courses for warrant officers, to leadership, resource management, and other advanced courses for senior officers (noncommissioned and commissioned).

The diversity in missions and potential environmental impacts associated with the Chesapeake Bay region were important considerations in the development of the P2 Handbook.

STRUCTURE AND CONTENT OF THE APG P2 HANDBOOK

The APG P2 Handbook provides up-to-date information on environmental issues and regulations related to pollution prevention. It provides Army-specific and APG-specific information to show readers how to implement P2 initiatives in their own lives. The Handbook also attempts to help readers understand why P2 is relevant to them and to their jobs. For example, it explains why the State of Maryland is non-compliant in that its air exceeds the regulated level for ground-level ozone, and describes the products and practices that contribute to ground-level ozone, such as those products that emit volatile organic compounds (VOCs). The Handbook offers substitutes for these VOC-emitting products and suggests process changes to decrease and eliminate this contributing factor to ground-level ozone.

The Handbook also provides a readily available resource to APG personnel, including shop personnel, technicians, and staff at the Command-level. Each module contains an *Additional Information Sources* section and references.

Structure: Each module of the APG P2 Handbook was designed to be short (5 to 10 pages), with narrowly focused information on a specific topic, and able to stand alone without extensive reference to other parts of the Handbook. The generic outline for each of the modules is as follows:

Section A: An introductory section, which clearly defines the purpose of the module, and shows how the information in the module is applicable to the end-user at APG.

Section B: The technical or regulatory information, which discusses the module topic as it relates to pollution prevention. This information was written for the non-technical reader, is presented in plain, understandable language and uses graphics to illustrate key points.

Section C: A summary section, which tells the reader where to go for more information on the topic. This section directs the reader to additional information sources.

The Handbook is presented in a three-ring binder to allow for easy revision and addition of modules. The modules are separated by tabs that are labeled with the corresponding module's topic. A separate index is provided so that the reader can easily find information of interest.

The original outline included an initial list of topics, but expansion on these ideas was anticipated. For example, the proposed topic of the environmental science of ozone and acid rain would be discussed as separate modules for each of the different types of products used by the operations at APG, and also for environmental issues of interest in addition to ozone and acid rain. By placing these in separate modules, the reader is able to look at the one module that focuses on their activity, and would not need to work through text on unrelated issues. Similarly, the suggested topic of environmental laws and Executive Orders could be expanded into two separate modules, one focusing on laws and orders that mandate pollution prevention and reporting, and the other focusing on laws that regulate the handling and disposal of hazardous materials.

It was expected that there would be some overlap in material between the modules. For example, the module on the environmental science of petroleum fuels will necessarily present some of the same information found in the module that discusses ozone and the greenhouse effect. However, this duplication was necessary to ensure that each module could stand alone.

Content: The APG P2 Handbook is an on-hand resource for shop and office personnel, and is the basis for subsequent APG pollution prevention training programs. The Handbook consists of 12 independent modules that describe APG pollution prevention practices and policies. Overviews of each module are presented below.

Air Pollution provides information on the sources and processes that produce air quality problems, such as acid rain, greenhouse effect, stratospheric ozone depletion, and ground-level ozone. The module describes the effects of each and identifies regulatory and technological control measures.

Chesapeake Bay is an overview of the sources of pollution that affect the quality of the Chesapeake Bay with a focus on APG activities and the Chesapeake Bay watershed.

Storm Water Pollution provides a detailed discussion of storm water pollution and its potential impact on water quality.

Solid Waste Management and Recycling is an overview of solid waste disposal and management issues, including construction and demolition debris. It discusses the types of wastes that APG generates and describes methods of managing solid waste and how each affects the environment and human health.

Hazardous Materials Management defines hazardous materials and provides guidance on how to properly handle them at APG. It also provides information on the purpose and operation of APG's hazardous inventory tracking system (HITS).

P2 Requirements summarizes regulations and executive orders applicable to APG's P2 program.

Material Safety Data Sheets explains how to obtain and review material safety data sheets in order to effectively identify chemical composition, health and safety information, spill cleanup requirements, and disposal requirements.

Environmentally Preferable Products provides guidance on how to identify and purchase environmentally safe products and services.

Life-Cycle Assessment describes how life-cycle cost analysis provides a complete picture of the costs and environmental effects of hazardous material procurement and disposal.

Green Building provides a detailed discussion of the green building concept, including issues related to acoustics, air quality, energy efficiency, historical and cultural resource preservation, resource conservation, waste management, and water conservation. It describes the environmental benefits of green building techniques and discusses the adverse impacts of traditional techniques.

P2 Success Stories presents examples of pollution prevention initiatives at APG and their results.

P2 Information Sources shows the reader how to obtain information on federal guidance documents, and provides APG P2 contacts, sources of technical information, and Internet guidance.

The handbook has three appendices:

- Appendix A: Relevant Federal Environmental Laws
- Appendix B: Pollution Prevention Executive Orders
- Appendix C: Army Regulations

The following attachments are also included in the P2 Handbook:

- 1.1 Air Pollution Treatment Technologies
- 3.1 How Does Wastewater Differ from Storm Water?
- 4.1 CD Debris Recycling and Reuse Opportunities
- 5.1 APG Hazardous Materials Management Policy Memorandum and Hazardous Materials Management Procedures Handbook
- 5.2 Summary of Federal Acquisition Regulation (FAR) Changes to Implement Executive Order 12856
- 6.1 Army Sources
- 6.2 State Sources
- 6.3 National Sources
- 6.4 Regional Sources
- 6.5 Publications
- 6.6 Internet Services
- 7.1 Federal Supply Class (FSC) Hazardous Items Requiring MSDSs
- 8.1 EPA Guidance on Acquisition of Environmentally Preferable Products and Services
- 8.2 Recovered Materials Advisory Notice (RMAN)
- 8.3 40 CFR, Protection of Environment, Part 247 - Comprehensive Procurement Guideline for Products Containing Recovered Materials
- 8.4 APG Guidelines for Selecting Products and Equipment
- 8.5 APG Paint Standards for Architectural Coatings
- 9.1 Life-Cycle Impacts Checklist
- 10.1 APG's Green Building Policy
- 10.2 APG's Green Building Checklist
- 10.3 Recommended Sealing Methods
- 10.4 Appropriate Weight Levels for Various Tasks
- 10.5 Recommended Illumination Levels for Various Tasks
- 12.1 APG P2 Resources
- 12.2 State and Local P2 Resources
- 12.3 P2 Bulletin Boards
- 12.4 Electronically Available P2 Resources